

CLAIMS

WE CLAIM:

1. A transgenic plant comprising in its genome a transgene comprising a sense or antisense FPA polynucleotide sequence which causes the plant to have an altered flowering time as compared to non-transgenic plants of the same species.
2. The transgenic plant of claim 1, wherein the transgenic plant flowers earlier than non-transgenic plants of the same species.
3. The transgenic plant of claim 1, wherein the transgenic plant flowers later than non-transgenic plants of the same species.
4. The transgenic plant of claim 1, wherein the FPA polynucleotide sequence is from *Arabidopsis thaliana*.
5. The transgenic plant of claim 1, wherein the FPA polynucleotide sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.
6. Seed of the transgenic plant of claim 1.
7. A plant grown from the seed of claim 6.
8. A plant comprising in its genome a genetic construct comprising a sense or antisense FPA polynucleotide sequence, wherein the expression of the sequence in the plant causes alteration in the flowering timing of the plant as compared to non-transgenic plants of the same species.
9. The plant of Claim 8, wherein the genetic construct further comprises a promoter, not natively associated with the FPA polynucleotide sequence, which promotes the expression of the FPA polynucleotide sequence in the plant.

10. The plant of claim 8, wherein the transgenic plant flowers earlier than non-transgenic plants of the same species.

11. The plant of claim 8, wherein the transgenic plant flowers later than non-transgenic plants of the same species.

12. The plant of claim 8, wherein the FPA polynucleotide sequence is from *Arabidopsis thaliana*.

13. The plant of claim 8, wherein the FPA polynucleotide sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.

14. A seed of the plant of claim 8.

15. A plant grown from the seed of claim 14.

16. A plant seed comprising in its genome a genetic construct comprising a sense or antisense FPA polynucleotide sequence and a plant expressible promoter, which promotes expression of the FPA polynucleotide sequence in the plant, wherein expression of the sequence in the plant causes alteration of the flowering timing of the plant as compared to non-transgenic plants of the same species..

17. The seed of claim 16, wherein the transgenic plant flowers earlier than non-transgenic plants of the same species.

18. The seed of claim 16, wherein the transgenic plant flowers later than non-transgenic plants of the same species.

19. The seed of claim 16, wherein the FPA polynucleotide sequence is from *Arabidopsis thaliana*.

20. The seed of claim 16, wherein FPA polynucleotide sequence is selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:5 and SEQ ID NO:6.

21. A transgenic plant cultivated from the seed of claim 16.

22. An isolated DNA sequence comprising the coding sequence for the FPA gene from *Arabidopsis thaliana*.

23. The DNA sequence of Claim 22, wherein the sequence is selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:2.

24 - 23. An isolated DNA sequence comprising a DNA sequence encoding the FPA protein from *Arabidopsis thaliana*.

25 24. The DNA sequence of Claim 23, wherein the sequence is selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:2

26 25. A method of producing a transgenic plant with altered flowering characteristics comprising the steps of constructing a genetic construct comprising a plant expressible promoter and an FPA polynucleotide sequence, introducing the genetic construct into a plant cell, selecting a plant that has received a copy of the genetic construct, and growing the plant under conditions that allow expression of the FPA gene.

27 26. A method of altering FLC mRNA activity in a plant comprising the steps of constructing a genetic construct comprising a plant expressible promoter and an FPA polynucleotide sequence, introducing the genetic construct into a plant cell, selecting a plant that has received a copy of the genetic construct, and growing the plant under conditions that allow expression of the FPA gene.